"Being in the same building is a way to facilitate a greater degree of interaction between boards and departments . . . I know [since we moved to the building] that it is so much easier to engage someone in the quick resolution of a problem or question."

— Winston H. Hickox, Secretary,
California Environmental Protection Agency

The new California Environmental Protection Agency headquarters building gives a physical presence to the reality of a single agency whose task is to guard the great environment we have and to improve it as well.

For the first time ever, the Agency and its six boards, departments and an office share a single home. Previously we were scattered all over Sacramento. Now the people of our various parts can confer and collaborate with an ease never before possible. Cal/EPA Secretary Winston H. Hickox observes, "Being in the same building is a way to facilitate a greater degree of interaction between the boards and departments and make it easier for ideas to be vetted in more than one medium (area of activity) or more than one board or department. I know just in the two months [since we moved to the building] that it is so much easier to engage someone in the quick resolution of a problem or question. I guess that puts the pressure on everyone to be responsive a little more quickly and pressured to be involved in more things. I can't help but believe that that's a good thing."

Our home is not "just another" office building. Designed from the ground up to emphasize the best in sustainable building practices, the Joe Serna Jr. California Environmental Protection Agency Headquarters Building is environmentally sensitive in a variety of ways. It opens just as Californians deal with the electricity challenge and it stands as a benchmark in how we can build and operate with comfort and style while still using resources sensibly.

Energy Efficiency

The Cal/EPA Headquarters Building in Sacramento, California, is among the world's most energy and resource-efficient buildings. Secretary Hickox comments that this approach not only makes environmental sense, it also makes the building a better place to visit and in which to work. "The heating, ventilating and air conditioning is a fresh air based system, which is desirable. It allows flushing on a more frequent basis," he says, "In this building it is not like you're pent-up in a building and you're just re-circulating the same air. The lighting systems have sensors that automatically shut down portions of light bays: less electricity when there is more sunlight shining in, more electric light when it is darker outside. Lights automatically shut off at certain times. Lights in cubicles and individual working lights automatically shut off if a motion detector senses there is no one near by. The same with computer monitors, they will automatically go off. We have the ability to measure the electrical energy load that's being drawn by floor, by lighting versus wall sockets so we can tell how efficient individual floors are. We have solar panels of the roof of the 8th floor as a demonstration of the concept of distributed generation."

Building Architect David C. Martin (FAIA) points out, "The site itself is a green site. It is something that pulls together a whole series of different offices that were spread across Sacramento into one area and it's a site with good transit and is centrally located. So it's a

very positive place to be. Our challenge was to design a building that made some moves from an energy conservation standpoint. One way was to orient the building north and south. And we know that by building with the long axis East-West you save about 6% of total energy over a building that is oriented North-South. The evenings in Sacramento can get pretty cool, so we developed an air-conditioning system where the fans were located in the corners of the building on each floor, so each floor of the building could have access to a tremendous amount of fresh air. So you can flush the building out in the morning and fill it with cool air for free, and get superior indoor air quality and then use that as kind of a volume of cool air to get a start on the air conditioning requirements during the hot day. I've never before been able to put the fans on the outside of the building because most office buildings owners want corner offices. But, here the requirements were different. People were more concerned with energy conservation than corner offices. It's proving to be quite successful. I was talking to the mechanical engineer the other day and the building is amazingly efficient. By having those fans on each floor you can get a huge volume of air through the building."

Combining common-sense and high-tech elements with comfort and style, the building features:

- Ultra Low e Windows—Low-emissivity dual-pane exterior glass keeps heat in during the winter and keeps it out during the summer. Expansive use of glass also reduces energy use by providing natural ambient lighting in more areas.
- Innovative Heating and Cooling Design—Heating and cooling units are sized and located strategically throughout the building to optimize energy savings by using fresh air. State-of-the-art controls make use of cooler night air during early morning hours. The entire system saves 25% more energy than the most stringent building standards now require. Using fresh air to cool workspaces also makes for a more comfortable working environment than in traditional office buildings.
- High Efficiency Lighting and Equipment—Employees use super-high efficiency and low polluting task lights,

"We stepped the design back so that the tallest part of the building is away from the historic City Hall. We didn't want to put the mass of the new building close to that beautiful, old structure. So that set up a rationale, right off the bat for organizing our site. That also created the courtyard and the rationale for why the garden is where it is. The other thing that is important about that is, that because of Cesar Chavez Park (a classic American design), we wanted to make sure we didn't take away from the frame of the corners of the park, it's like a town square. We put the entry portal to Cal/EPA out on the corner to keep the frame of the park going. It was important to have part of the building up against the corner and that portal also related to city hall, in terms of the lines and being to scale with city hall. So that started to give us a play on how we organized the site. It had an historic component and an energy component and a town-planning component."

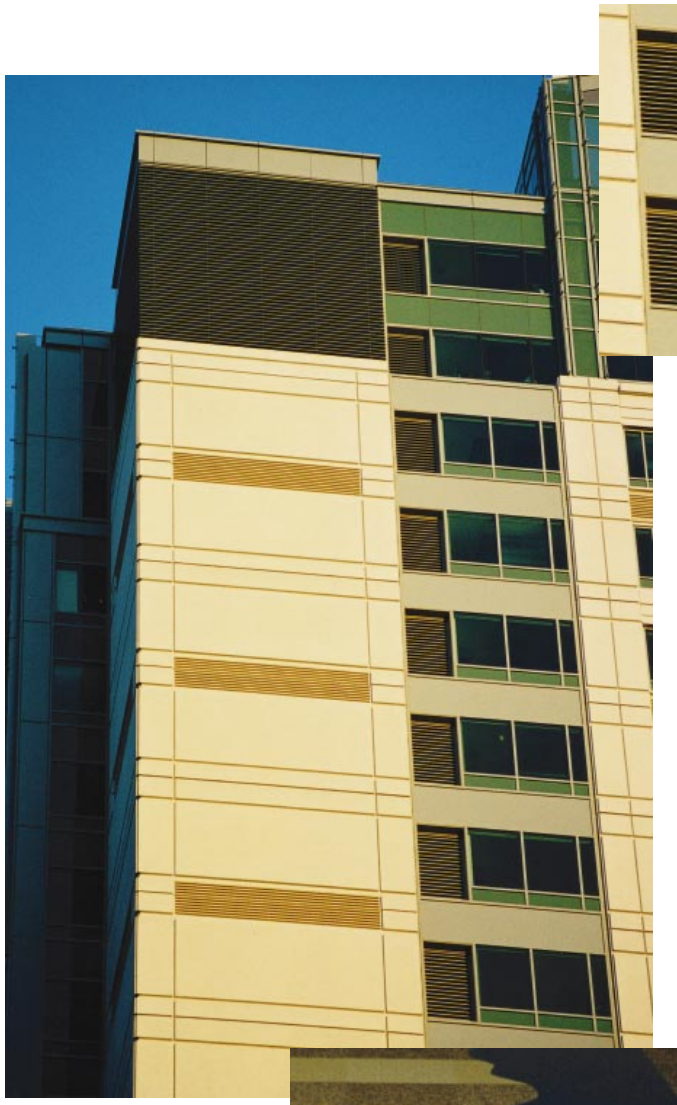
–David C. Martin, FAIA

Low wattage fluorescent lighting throughout the building supplements plentiful daylight. The building's lighting demand is less than one watt per square foot.

Ninety percent of the building's structural steel is recycled.

The warm wood paneling in the lobby and other public areas is eucalyptus—plentiful, fast growing, its harvesting does not damage the environment.

Photo-voltaic panels produce some of the building's electric power.



Large vents on each floor (see inset photo above) make it possible to fill the entire building with cool night air. This innovative design saves energy and improves air quality inside the building.

Carpeting throughout the building is made with 52% recycled material and will be totally recycled when its useful life is over.

overhead lighting, and computers—less than one watt per square foot for lighting! Motion sensors and sophisticated end-use electricity meters ensure that lighting and power are only used when needed.

Sustainability

The Joe Serna Jr. California Environmental Protection Agency Headquarters Building incorporates leading edge but simple conservation and sustainability principles. Some of the earth friendly features are:

- Recycled Materials—Soda bottles, diaper tabs, sunflower seeds, structural steel, and other recycled products have been transformed into construction materials, carpeting, acoustic panels, auditorium seating, cubicle surfaces, modular systems, signage, and dozens of other components and furnishings throughout the building.
- Resource Efficiency and Pollution Prevention—The building team evaluated "life-cycle" pollution associated with the manufacture, transport, construction, use, maintenance, and disposal of materials and workspaces. Carpet tiles were installed without using wet glue. Spackle and paints used in the building eliminated volatile organic compounds—reducing air pollution.

Amenities

Cal/EPA employees and the public they serve enjoy many unique amenities. The Cal/EPA Headquarters building includes:

- 25 electric vehicle charging stations in the adjacent parking structure.
- Solar (photo-voltaic) panels on the ninth floor that produce enough electricity to power ten homes.
- A cafe offering food service along with biodegradable, recycled/recyclable utensils.
- An aggressive building-wide waste collection and recycling/compost program. Working with employees, janitors, vendors, and a solid waste management company, Cal/EPA will generate less waste per person—and then compost and recycle more than 90 percent of that residual!
- An indoor air quality plan that involves janitorial and maintenance practices and uses non-toxic and biodegradable cleaning products, and an integrated pest management plan.